**Smarter Science Lesson (Draft): Alka-Seltzer Rockets**

Learning Goal:

Today we will conduct a scientific inquiry to determine what affects the height of a film canister filled with Alka-Seltzer and water.

Success Criteria:

* make accurate and objective observations
* write a testable question using an appropriate dependent and independent variable
* make an appropriate prediction based on our initial observations
* plan and carry out an experiment based on our testable question
* write a conclusion based on our observations

Set Up: Groups of 3 in Grade 8; Groups of 2 in Grade 7

Roles:

* materials manager – collects required equipment and materials for the group
* experimenter – conducts the experiment with help from the group
* recorder – records observations and questions on sticky notes; posts and piles them on the poster

Materials (per group): 250-mL beaker, film canister, 2 Alka-Seltzer tablets, access to water, green and purple sticky notes, launch pad (1 m x 1m)

Abbreviated Lesson Plan:

* Share Learning Goal
* Begin with Initial Observations:

1. Place a half tablet of Alka-Seltzer into 50 mL of water in a 250 mL beaker
2. Watch teacher demo: half tablet of Alka-Seltzer into a half-filled film canister

* Students make observations on green sticky notes (one observation per sticky note)

“I wonder” questions:

* Based on their observations, students write any questions they are wondering about (purple sticky notes).
* Model: I heard somebody say, “I wonder what would happen if the teacher added more water to the film canister?”

Guide students through the second poster.

Show one example from the third poster. “As a group, let’s select the same dependent variable but each group can choose a different independent variable (based on their questions)”

Share Success Criteria

Students complete their experiment

* select their independent variable
* write a testable question (as modeled by poster #4)
* outline a procedure (for example, if they’re looking at how the amount of water is going to affect the height of the canister, then they need to decide the different amounts of water to use 🡪 a full canister, ¾ full, ½ full, ¼ full, …
* test their question
* record observations
* write a conclusion statement

Names: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_





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| **Our Procedure:**  *(Consider what will you change and what you will keep constant)* | **Our Observations:** |
| **Our Conclusion:** | |